

1. Solve the equation for x and choose the interval that contains x (if it exists).

$$9 = \ln \sqrt[7]{\frac{26}{e^{5x}}}$$

- A. $x \in [-3.35, -2.42]$
 - B. $x \in [-11.96, -11.3]$
 - C. $x \in [-4.61, -3.11]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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2. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$5^{4x+2} = 49^{3x+4}$$

- A. $x \in [-2.6, -1.5]$
 - B. $x \in [0.4, 3.8]$
 - C. $x \in [-0.5, 0.3]$
 - D. $x \in [10.7, 12.7]$
 - E. There is no Real solution to the equation.
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3. Which of the following intervals describes the Domain of the function below?

$$f(x) = e^{x+1} + 7$$

- A. $(a, \infty), a \in [-14, -3]$
 - B. $(-\infty, a], a \in [2, 10]$
 - C. $[a, \infty), a \in [-14, -3]$
 - D. $(-\infty, a), a \in [2, 10]$
 - E. $(-\infty, \infty)$
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4. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$2^{-4x+5} = 125^{-3x-4}$$

- A. $x \in [21.8, 25.6]$
 - B. $x \in [-1.3, -0.3]$
 - C. $x \in [8.9, 9.9]$
 - D. $x \in [-2.2, -1.3]$
 - E. There is no Real solution to the equation.
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5. Which of the following intervals describes the Range of the function below?

$$f(x) = \log_2(x + 2) + 5$$

- A. $(-\infty, a), a \in [4.4, 5.6]$
 - B. $[a, \infty), a \in [-1.2, 2.1]$
 - C. $[a, \infty), a \in [-4.3, 0.3]$
 - D. $(-\infty, a), a \in [-6.7, -2.2]$
 - E. $(-\infty, \infty)$
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6. Which of the following intervals describes the Range of the function below?

$$f(x) = -\log_2(x + 9) - 4$$

- A. $[a, \infty), a \in [-12, -6]$
 - B. $(-\infty, a), a \in [1, 7]$
 - C. $(-\infty, a), a \in [-5, 0]$
 - D. $[a, \infty), a \in [5, 11]$
 - E. $(-\infty, \infty)$
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7. Solve the equation for x and choose the interval that contains x (if it exists).

$$20 = \sqrt[6]{\frac{14}{e^{3x}}}$$

- A. $x \in [-1.7, -1]$
 - B. $x \in [4.9, 6.1]$
 - C. $x \in [-41.2, -40.3]$
 - D. There is no Real solution to the equation.
 - E. None of the above.
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8. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5(-4x + 6) + 4 = 2$$

- A. $x \in [9.5, 10.5]$
 - B. $x \in [-0.51, 2.49]$
 - C. $x \in [5.5, 7.5]$
 - D. $x \in [-4.75, -1.75]$
 - E. There is no Real solution to the equation.
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9. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5(4x + 6) + 4 = 2$$

- A. $x \in [-2.1, 2.1]$
 - B. $x \in [2, 6.1]$
 - C. $x \in [-6.7, -6]$
 - D. $x \in [-9.8, -7.7]$
 - E. There is no Real solution to the equation.
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10. Which of the following intervals describes the Domain of the function below?

$$f(x) = -e^{x-2} + 7$$

- A. $(-\infty, a), a \in [4, 11]$
 - B. $(a, \infty), a \in [-8, -3]$
 - C. $[a, \infty), a \in [-8, -3]$
 - D. $(-\infty, a], a \in [4, 11]$
 - E. $(-\infty, \infty)$
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